General

Guideline Title

Vision screening for children 1 to 5 years of age: U.S. Preventive Services Task Force recommendation statement.

Bibliographic Source(s)

US Preventive Services Task Force. Vision screening for children 1 to 5 years of age: US Preventive Services Task Force Recommendation statement. Pediatrics. 2011 Feb;127(2):340-6. PubMed

Guideline Status

This is the current release of the guideline.

This release updates a previously published guideline: Screening for visual impairment in children younger than age 5 years: recommendation statement. Ann Fam Med 2004 May-Jun;2(3):263-6.

Recommendations

Major Recommendations

The U.S. Preventive Services Task Force (USPSTF) grades its recommendations (A, B, C, D, or I) and identifies the levels of certainty regarding net benefit (High, Moderate, and Low). The definitions of these grades can be found at the end of the "Major Recommendations" field.

Summary of Recommendations and Evidence

The USPSTF recommends vision screening for all children at least once between the ages of 3 and 5 years, to detect the presence of amblyopia or its risk factors. This is a grade B recommendation.

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of vision screening for children <3 years of age. This is an I statement.

Clinical Considerations

Patient Population Under Consideration

This recommendation applies to all children 1 to 5 years of age.

Screening Tests

Various screening tests that are feasible in primary care are used to identify visual impairment among children. These tests include visual acuity

tests, stereoacuity tests, the cover-uncover test, and the Hirschberg light reï¬‚ex test (for ocular alignment/strabismus), as well as the use of autorefractors (automated optical instruments that detect refractive errors) and photoscreeners (instruments that detect amblyogenic risk factors and refractive errors).

Treatment

Primary treatment for amblyopia includes the use of corrective lenses, patching, or atropine treatment of the nonaffected eye. Treatment may consist of a combination of interventions.

Suggestions for Practice Regarding I Statement

In deciding whether to refer children <3 years of age for screening, clinicians should consider the following.

Potential Preventable Burden

Most studies show that screening and treatment later in the preschool years seem to be as effective at preventing amblyopia as screening and treatment earlier in life.

Costs

Potential disadvantages of using photoscreeners and autorefractors are the initial high costs associated with the instruments and the need for external interpretation of screening results with some photoscreeners.

Current Practice

Typical components of vision screening include assessments of visual acuity, strabismus, and stereoacuity. Younger children often are unable to cooperate with some of the screening tests performed in clinical practice, such as visual acuity testing. Stereoacuity testing often is omitted and may be performed incorrectly when attempted. Screening of younger children may be difficult and often yields false-positive results because of the child's inability to cooperate with testing. Children with positive ï¬ndings should be referred for a full ophthalmologic examination, to coni¬rm the presence of vision problems, and further treatment.

Screening Intervals

The USPSTF did not ï¬nd adequate evidence to determine the optimal screening interval.

Definitions:

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.	Offer or provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read "Clinical Considerations" section of USPSTF Recommendation Statement (see "Major Recommendations" field). If this service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as: • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice • Lack of coherence in the chain of evidence As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: • The limited number or size of studies • Important flaws in study design or methods • Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice • A lack of information on important health outcomes More information may allow an estimation of effects on health outcomes.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Visual impairment including:

- Amblyopia and associated risk factors
- Strabismus
- Refractive errors not associated with amblyopia

Guideline Category

Prevention

Screening

Clinical Specialty

Family Practice

Ophthalmology

Optometry

Pediatrics

Preventive Medicine

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Nurses

Optometrists

Physician Assistants

Physicians

Guideline Objective(s)

- To summarize the current U.S. Preventive Services Task Force (USPSTF) recommendations and supporting scientific evidence on screening for visual impairment in children 1 to 5 years of age
- To update the 2004 recommendations on screening for visual impairment in children younger than age 5 years

Target Population

All children 1 to 5 years of age seen in primary care settings

Interventions and Practices Considered

Screening

1. Vision screening tests
    - Visual acuity tests
    - Stereoacuity tests
    - Cover-uncover test
    - Hirschberg light reflex test (for ocular alignment/strabismus)
2. Use of autorefractors
3. Use of photoscreeners

Treatment

Treatment options discussed but not specifically recommended include:

1. Use of corrective lenses
2. Patching
3. Atropine treatment

Major Outcomes Considered

- Key Question 1: Is vision screening in children ages 1–5 years associated with improved health outcomes?
- Key Question 1a: Does effectiveness of vision screening in children ages 1–5 years vary in different age groups?
- Key Question 2: What is the accuracy and reliability of risk factor assessment for identifying children ages 1–5 years at increased risk for vision impairment?
- Key Question 3: What is the accuracy of screening tests for vision impairment in children ages 1–5 years?
- Key Question 3a: Does accuracy of screening tests for vision impairment vary in different age groups in children ages 1–5 years?
- Key Question 4: What are the harms of vision screening in children ages 1–5 years?
- Key Question 5: What is the effectiveness of treatment for vision impairment in children ages 1–5 years?
- Key Question 6: What are the harms of treatment in children ages 1–5 years at increased risk for vision impairment or vision disorders?

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic review of the literature was prepared by the Oregon Evidence-based Practice Center (EPC) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Search Strategies

EPC staff searched Ovid MEDLINE from 1950 to July 2009, the Cochrane Central Register of Controlled Trials, and the Cochrane Database of Systematic Reviews through the third quarter of 2009 (Appendix A1 in the Evidence Synthesis [see the "Availability of Companion Documents" field]). EPC staff also reviewed reference lists of relevant articles and queried experts in the field for additional citations.

Study Selection

Studies were selected based on predefined inclusion and exclusion criteria developed for each Key Question (Appendix A2 in the Evidence Synthesis). EPC staff defined the target population as children ages 1–5 years evaluated in primary care or community-based settings without known impaired visual acuity or obvious symptoms of impaired visual acuity. EPC staff also included studies of vision screening in eye specialty settings, but evaluated their applicability to primary care settings. Although the term "vision impairment" is broad, diseases covered in this review are amblyopia, amblyogenic risk factors (Table 1 in the Evidence Synthesis), strabismus, and simple refractive error. For screening tests, visual acuity tests, tests for ocular misalignment, stereoacuity tests, photoscreeners, and autorefractors were included.

EPC staff excluded visual acuity testing with cycloplegia and retinoscopy, as well as other tests not commonly used in primary care. For treatments, which are typically provided in eye specialty settings, EPC staff focused on risk reduction interventions, including correction of refractive error and penalization of the nonamblyopic eye (with patching or atropine). Outcomes of interest were visual acuity, risk for amblyopia, vision-related function, school performance, and adverse events related to screening or treatment (such as anxiety, labeling, or other psychosocial effects; false-positive rates; unnecessary treatments; and any negative effects on vision). Children with severe congenital conditions or developmental delays, retinopathy of prematurity, glaucoma, congenital cataracts, and high myopia were excluded, as these were considered to be outside the scope of preschool vision screening in primary care. This review was limited to published studies available in the English language.

Two reviewers evaluated each study at the title/abstract and full-text article stages to determine eligibility for inclusion. The flow of studies from initial identification of titles and abstracts to final inclusion or exclusion is diagrammed in Appendix A3 of the Evidence Synthesis. Studies that were excluded after review of the full-text articles and reasons for exclusion are listed in Appendix A4 (see the "Availability of Companion Documents" field).

Number of Source Documents

- Abstracts of potentially relevant articles identified through MEDLINE, Cochrane, and other sources: 3,699
- Full-text articles reviewed for relevance to key questions: 427

(See Appendix A3 in the Evidence Synthesis [see the "Availability of Companion Documents" field] for the number of articles included for each key question.)

Methods Used to Assess the Quality and Strength of the Evidence

Expert Consensus

Rating Scheme for the Strength of the Evidence

Not applicable

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

Note from the National Guideline Clearinghouse (NGC): A systematic review of the literature was prepared by the Oregon Evidence-based Practice Center (EPC) for use by the U.S. Preventive Services Task Force (USPSTF) (see the "Availability of Companion Documents" field).

Data Abstraction and Quality Rating

EPC staff abstracted details about the study population, study design, data analysis, length of follow-up, results, and quality (Appendix B in the Evidence Synthesis [see the "Availability of Companion Documents" field]). Visual acuity measurements were converted from Snellen to logMAR scales using published conversion charts. One author abstracted data and another author verified data abstraction for accuracy. Two authors independently rated the internal validity of each study as "good," "fair," or "poor" based on predefined criteria developed by the USPSTF (see Appendix A5 of the Evidence Synthesis). For diagnostic accuracy studies, EPC staff used the "diagti" procedure in Stata 10.0 (StataCorp, College Station, TX) to calculate sensitivities, specificities, and likelihood ratios. For studies where the reference standard was only performed in a random sample of negative screens, EPC staff corrected for verification bias when estimating sensitivity and specificity using the method of Begg and Greenes. In this review, the positive likelihood ratio (PLR) is the odds of a visual condition among subjects with the risk factor present compared with those without the risk factor. The negative likelihood ratio (NLR) is the odds of a visual condition among subjects without the risk factor compared with those with the risk factor present. EPC staff classified PLRs >10 and NLRs ≤0.1 as "large/strong," PLRs >5 and ≤10 and NLRs >0.1 and ≤0.2 as "moderate," PLRs >2 and ≤5 and NLRs >0.2 and ≤0.5 as "small/weak," and PLRs >1 and ≤5 and NLRs >0.5 and ≤1 as "very small/very weak."

For all studies EPC staff evaluated applicability to populations likely to be encountered in primary care screening settings. Factors considered when assessing applicability included whether children were recruited from primary care settings, the prevalence of visual conditions, and the severity of visual conditions. Discrepancies in quality ratings were resolved by discussion and consensus.

Data Synthesis

EPC staff assessed the overall strength of the body of evidence for each Key Question ("good," "fair," or "poor") or part of a Key Question using methods developed by the USPSTF, based on the number, quality, and size of studies; consistency of results between studies; and directness of evidence. EPC staff did not attempt to quantitatively pool results of studies of diagnostic test accuracy due to marked differences among studies in populations, how screening cutoffs were defined, and target conditions, as well as substantial between-study heterogeneity in results. In addition, there were too few randomized trials of specific treatment comparisons to perform meta-analysis.

Methods Used to Formulate the Recommendations

Balance Sheets

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The U.S. Preventive Services Task Force (USPSTF) systematically reviews the evidence concerning both the benefits and harms of widespread implementation of a preventive service. It then assesses the certainty of the evidence and the magnitude of the benefits and harms. On the basis of this assessment, the USPSTF assigns a letter grade to each preventive service signifying its recommendation about provision of the service (see Table below). An important, but often challenging, step is determining the balance between benefits and harms to estimate "net benefit" (that is, benefits minus harms).

Table 1. U.S. Preventive Services Task Force Recommendation Grid*

Certainty of Net Benefit	Magnitude of Net Benefit			
	Substantial	Moderate	Small	Zero/Negative
High	A	B	C	D
Moderate	B	B	C	D
Low	Insufficient			

**A, B, C, D,* and *I (Insufficient)* represent the letter grades of recommendation or statement of insufficient evidence assigned by the U.S. Preventive Services Task Force after assessing certainty and magnitude of net benefit of the service (see the "Rating Scheme for the Strength of the Recommendations" field).

The overarching question that the USPSTF seeks to answer for every preventive service is whether evidence suggests that provision of the service would improve health outcomes if implemented in a general primary care population. For screening topics, this standard could be met by a large randomized, controlled trial (RCT) in a representative asymptomatic population with follow-up of all members of both the group "invited for screening" and the group "not invited for screening."

Direct RCT evidence about screening is often unavailable, so the USPSTF considers indirect evidence. To guide its selection of indirect evidence, the USPSTF constructs a "chain of evidence" within an analytic framework. For each key question, the body of pertinent literature is critically appraised, focusing on the following 6 questions:

1. Do the studies have the appropriate research design to answer the key question(s)?
2. To what extent are the existing studies of high quality? (i.e., what is the internal validity?)
3. To what extent are the results of the studies generalizable to the general U.S. primary care population and situation? (i.e., what is the external validity?)
4. How many studies have been conducted that address the key question(s)? How large are the studies? (i.e., what is the precision of the evidence?)
5. How consistent are the results of the studies?
6. Are there additional factors that assist the USPSTF in drawing conclusions (e.g., presence or absence of dose–response effects, fit within a biologic model)?

The next step in the process is to use the evidence from the key questions to assess whether there would be net benefit if the service were implemented. In 2001, the USPSTF published an article that documented its systematic processes of evidence evaluation and recommendation development. At that time, the USPSTF's overall assessment of evidence was described as good, fair, or poor. The USPSTF realized that this rating seemed to apply only to how well studies were conducted and did not fully capture all of the issues that go into an overall assessment of the evidence about net benefit. To avoid confusion, the USPSTF has changed its terminology. Whereas individual study quality will continue to be characterized as good, fair, or poor, the term *certainty* will now be used to describe the USPSTF's assessment of the overall body of evidence about net benefit of a preventive service and the likelihood that the assessment is correct. Certainty will be determined by considering all 6 questions listed above; the judgment about certainty will be described as high, moderate, or low.

In making its assessment of certainty about net benefit, the evaluation of the evidence from each key question plays a primary role. It is important

to note that the USPSTF makes recommendations for real-world medical practice in the United States and must determine to what extent the evidence for each key question—even evidence from screening RCTs or treatment RCTs—can be applied to the general primary care population. Frequently, studies are conducted in highly selected populations under special conditions. The USPSTF must consider differences between the general primary care population and the populations studied in RCTs and make judgments about the likelihood of observing the same effect in actual practice.

It is also important to note that one of the key questions in the analytic framework refers to the potential harms of the preventive service. The USPSTF considers the evidence about the benefits and harms of preventive services separately and equally. Data about harms are often obtained from observational studies because harms observed in RCTs may not be representative of those found in usual practice and because some harms are not completely measured and reported in RCTs.

Putting the body of evidence for all key questions together as a chain, the USPSTF assesses the certainty of net benefit of a preventive service by asking the 6 major questions listed above. The USPSTF would rate a body of convincing evidence about the benefits of a service that, for example, derives from several RCTs of screening in which the estimate of benefits can be generalized to the general primary care population as "high" certainty (see the "Rating Scheme for the Strength of Recommendations" field). The USPSTF would rate a body of evidence that was not clearly applicable to general practice or has other defects in quality, research design, or consistency of studies as "moderate" certainty. Certainty is "low" when, for example, there are gaps in the evidence linking parts of the analytic framework, when evidence to determine the harms of treatment is unavailable, or when evidence about the benefits of treatment is insufficient. Table 4 in the methodology document listed below (see "Availability of Companion Documents" field) summarizes the current terminology used by the USPSTF to describe the critical assessment of evidence at all 3 levels: individual studies, key questions, and overall certainty of net benefit of the preventive service.

Sawaya GF et al. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. Ann Intern Med. 2007;147:871-875.[5 references].

I Statements

For I statements, the USPSTF has a new plan to commission its Evidence-based Practice Centers to collect information in 4 domains pertinent to clinical decisions about prevention and to report this information routinely. This plan is described in the paper: Petitti DB et al. Update on the methods of the U.S. Preventive Services Task Force: insufficient evidence. Ann Intern Med. 2009;150:199-205 (see "Availability of Companion Documents" field).

The first domain is potential preventable burden of suffering from the condition. When evidence is insufficient, provision of an intervention designed to prevent a serious condition (such as dementia) might be viewed more favorably than provision of a service designed to prevent a condition that does not cause as much suffering (such as rash). The USPSTF recognized that "burden of suffering" is subjective and involves judgment. In clinical settings, it should be informed by patient values and concerns.

The second domain is potential harm of the intervention. When evidence is insufficient, an intervention with a large potential for harm (such as major surgery) might be viewed less favorably than an intervention with a small potential for harm (such as advice to watch less television). The USPSTF again acknowledges the subjective nature and the difficulty of assessing potential harms: For example, how bad is a "mild" stroke?

The third domain is cost—not just monetary cost, but opportunity cost, in particular the amount of time a provider spends to provide the service, the amount of time the patient spends to partake of it, and the benefits that might derive from alternative uses of the time or money for patients, clinicians, or systems. Consideration of clinician time is especially important for preventive services with only insufficient evidence because providing them could "crowd out" provision of preventive services with proven value, services for conditions that require immediate action, or services more desired by the patient. For example, a decision to routinely inspect the skin could take up the time available to discuss smoking cessation, or to address an acute problem or a minor injury that the patient considers important.

The fourth domain is current practice. This domain was chosen because it is important to clinicians for at least 2 reasons. Clinicians justifiably fear that not doing something that is done on a widespread basis in the community may lead to litigation. More important, addressing patient expectations is a crucial part of the clinician–patient relationship in terms of building trust and developing a collaborative therapeutic relationship. The consequences of not providing a service that is neither widely available nor widely used are less serious than not providing a service accepted by the medical profession and thus expected by patients. Furthermore, ingrained care practices are difficult to change, and efforts should preferentially be directed to changing those practices for which the evidence to support change is compelling.

Although the reviewers did not explicitly recognize it when these domains were chosen, the domains all involve consideration of the potential consequences—for patients, clinicians, and systems—of providing or not providing a service. Others writing about medical decision making in the face of uncertainty have suggested that the consequences of action or inaction should play a prominent role in decisions.

Rating Scheme for the Strength of the Recommendations

What the U.S. Preventive Services Task Force (USPSTF) Grades Mean and Suggestions for Practice

Grade	Grade Definitions	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is moderate or high certainty that the net benefit is small.	Offer or provide this service only if other considerations support offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read "Clinical Considerations" section of USPSTF Recommendation Statement (see "Major Recommendations" field). If this service is offered, patients should understand the uncertainty about the balance of benefits and harms.

USPSTF Levels of Certainty Regarding Net Benefit

Definition: The U.S. Preventive Services Task Force defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

Level of Certainty	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by factors such as: • The number, size, or quality of individual studies • Inconsistency of findings across individual studies • Limited generalizability of findings to routine primary care practice • Lack of coherence in the chain of evidence As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: • The limited number or size of studies • Important flaws in study design or methods • Inconsistency of findings across individual studies • Gaps in the chain of evidence • Findings not generalizable to routine primary care practice • A lack of information on important health outcomes

Level of Certainty	Description
	More information may allow an estimation of effects on health outcomes.

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Comparison with Guidelines from Other Groups

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

Peer Review. Before the U.S. Preventive Services Task Force (USPSTF) makes its final determinations about recommendations on a given preventive service, the Evidence-based Practice Center and the Agency for Healthcare Research and Quality send a draft evidence review to 4 to 6 external experts and to Federal agencies and professional and disease-based health organizations with interests in the topic. The experts are asked to examine the review critically for accuracy and completeness and to respond to a series of specific questions about the document. After assembling these external review comments and documenting the proposed response to key comments, the topic team presents this information to the USPSTF in memo form. In this way, the USPSTF can consider these external comments before it votes on its recommendations about the service. Draft recommendation statements are then circulated for comment from reviewers representing professional societies, voluntary organizations, and Federal agencies. These comments are discussed before the final recommendations are confirmed.

Comparison with Guidelines from Other Groups. Recommendations for screening from the following groups were discussed: American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American Academy of Ophthalmology (AAO), American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and the American Optometric Association (AOA).

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is not specifically stated for each recommendation.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Benefits of Detection and Early Intervention

The U.S. Preventive Services Task Force (USPSTF) found adequate evidence that early treatment for amblyopia, including the use of cycloplegic agents, patching, and eyeglasses, for children 3 to 5 years of age leads to improved visual outcomes. The USPSTF found inadequate evidence that early treatment of amblyopia for children <3 years of age leads to improved visual outcomes.

Potential Harms

Harms of Detection and Early Intervention

The U.S. Preventive Services Task Force (USPSTF) found limited evidence regarding harms of screening, including psychosocial effects, for children ≥3 years of age. False-positive screening results may lead to the overprescribing of corrective lenses. Adequate evidence suggests that the harms of treatment of amblyopia for children ≥3 years of age are limited to reversible loss of visual acuity resulting from patching of the nonaffected eye. The USPSTF found inadequate evidence of the harms of screening and treatment for children <3 years of age.

Qualifying Statements

Qualifying Statements

- The U.S. Preventive Services Task Force (USPSTF) makes recommendations about preventive care services for patients without recognized signs or symptoms of the target condition.
- Recommendations are based on a systematic review of the evidence of the benefits and harms and an assessment of the net benefit of the service.
- The USPSTF recognizes that clinical or policy decisions involve more considerations than this body of evidence alone. Clinicians and policymakers should understand the evidence but individualize decision making to the specific patient or situation.

Implementation of the Guideline

Description of Implementation Strategy

The experiences of the first and second U.S. Preventive Services Task Force (USPSTF), as well as that of other evidence-based guideline efforts, have highlighted the importance of identifying effective ways to implement clinical recommendations. Practice guidelines are relatively weak tools for changing clinical practice when used in isolation. To effect change, guidelines must be coupled with strategies to improve their acceptance and feasibility. Such strategies include enlisting the support of local opinion leaders, using reminder systems for clinicians and patients, adopting standing orders, and audit and feedback of information to clinicians about their compliance with recommended practice.

In the case of preventive services guidelines, implementation needs to go beyond traditional dissemination and promotion efforts to recognize the added patient and clinician barriers that affect preventive care. These include clinicians' ambivalence about whether preventive medicine is part of their job, the psychological and practical challenges that patients face in changing behaviors, lack of access to health care or of insurance coverage for preventive services for some patients, competing pressures within the context of shorter office visits, and the lack of organized systems in most practices to ensure the delivery of recommended preventive care.

Dissemination strategies have changed dramatically in this age of electronic information. While recognizing the continuing value of journals and other print formats for dissemination, the U.S. Preventive Services Task Force (USPSTF) will make all its products available through its Web site . The combination of electronic access and extensive material in the public domain should make it easier for a broad audience of users to access U.S. Preventive Services Task Force materials and adapt them for their local needs. Online access to U.S. Preventive Services Task Force products also opens up new possibilities for the appearance of the annual, pocket-size *Guide to Clinical Preventive Services*.

To be successful, approaches for implementing prevention have to be tailored to the local level and deal with the specific barriers at a given site, typically requiring the redesign of systems of care. Such a systems approach to prevention has had notable success in established staff-model health maintenance organizations, by addressing organization of care, emphasizing a philosophy of prevention, and altering the training and incentives for clinicians. Staff-model plans also benefit from integrated information systems that can track the use of needed services and generate automatic reminders aimed at patients and clinicians, some of the most consistently successful interventions. Information systems remain a major challenge for individual clinicians' offices, however, as well as for looser affiliations of practices in network-model managed care and independent practice associations, where data on patient visits, referrals, and test results are not always centralized.

Implementation Tools

Mobile Device Resources

Pocket Guide/Reference Cards

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

US Preventive Services Task Force. Vision screening for children 1 to 5 years of age: US Preventive Services Task Force Recommendation statement. Pediatrics. 2011 Feb;127(2):340-6. PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 (revised 2011 Feb)

Guideline Developer(s)

U.S. Preventive Services Task Force - Independent Expert Panel

Guideline Developer Comment

The U.S. Preventive Services Task Force (USPSTF) is a federally-appointed panel of independent experts. Conclusions of the U.S. Preventive Services Task Force do not necessarily reflect policy of the U.S. Department of Health and Human Services (DHHS) or its agencies.

Source(s) of Funding

United States Government

Guideline Committee

U.S. Preventive Services Task Force (USPSTF)

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**Members of the Task Force at the time this recommendation was finalized. For a list of current Task Force members, go to http://www.uspreventiveservicestaskforce.org/Page/Name/our-members*.

Financial Disclosures/Conflicts of Interest

The U.S. Preventive Services Task Force (USPSTF) has an explicit policy concerning conflict of interest. All members disclose at each meeting if they have a significant financial, professional/business, or intellectual conflict for each topic being discussed. USPSTF members with conflicts may be recused from discussing or voting on recommendations about the topic in question.

Guideline Status

This is the current release of the guideline.

This release updates a previously published guideline: Screening for visual impairment in children younger than age 5 years: recommendation statement. Ann Fam Med 2004 May-Jun;2(3):263-6.

Guideline Availability

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

Availability of Companion Documents

The following are available:

Evidence Reviews:

- Chou R, Dana T, Bougatsos C. Screening for visual impairment in children ages 1–5 years: systematic review to update the 2004 U.S. Preventive Services Task Force recommendation. Evidence Synthesis No. 81. AHRQ Publication No. 11-05151-EF-1. Rockville (MD): Agency for Healthcare Research and Quality; 2011.
- Chou R, Dana T, Bougatsos C. Screening for visual impairment in children ages 1–5 years: update for the USPSTF. Pediatrics 2011;127(2):e442-e479.

Electronic copies: Available from the U.S. Preventive Services Task Force (USPSTF) Web site.

Background Articles:

- Barton MB et al. How to read the new recommendation statement: methods update from the U.S. Preventive Services Task Force. Ann Intern Med. 2007;147:123-127.

- Guirguis-Blake J et al. Current processes of the U.S. Preventive Services Task Force: refining evidence-based recommendation development. Ann Intern Med. 2007;147:117-122.
- Sawaya GF et al. Update on the methods of the U.S. Preventive Services Task Force: estimating certainty and magnitude of net benefit. Ann Intern Med. 2007;147:871-875.
- Petitti DB et al. Update on the methods of the U.S. Preventive Services Task Force: insufficient evidence. Ann Intern Med. 2009;150:199-205.

Electronic copies: Available from U.S. Preventive Services Task Force (USPSTF) Web site .

The following are also available:

- Vision screening in children ages 1 to 5 years: clinical summary of U.S. Preventive Services Task Force recommendation. Rockville (MD): Agency for Healthcare Research and Quality; 2011. Electronic copies: Available from the U.S. Preventive Services Task Force Web site .
- The guide to clinical preventive services, 2010-2011. Recommendations of the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ), 2010. 292 p. Electronic copies available from the AHRQ Web site .

The Electronic Preventive Services Selector (ePSS) , available as a PDA application and a web-based tool, is a quick hands-on tool designed to help primary care clinicians identify the screening, counseling, and preventive medication services that are appropriate for their patients. It is based on current recommendations of the USPSTF and can be searched by specific patient characteristics, such as age, sex, and selected behavioral risk factors.

Patient Resources

None available

NGC Status

This summary was completed by ECRI on June 30, 1998. The information was verified by the guideline developer on December 1, 1998. This summary was updated by ECRI Institute on May 5, 2011. The updated information was verified by the guideline developer on June 1, 2011.

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